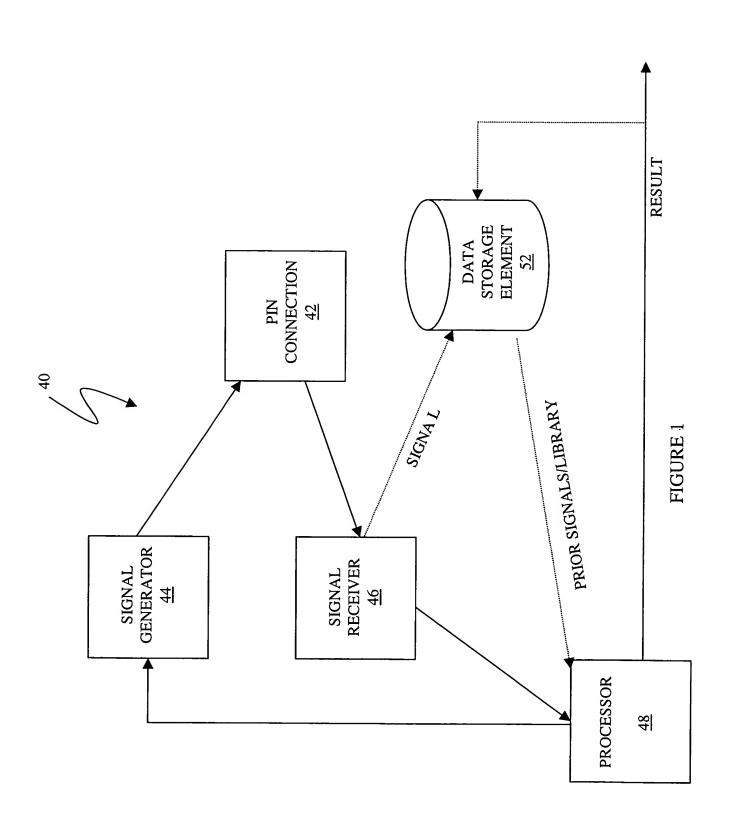
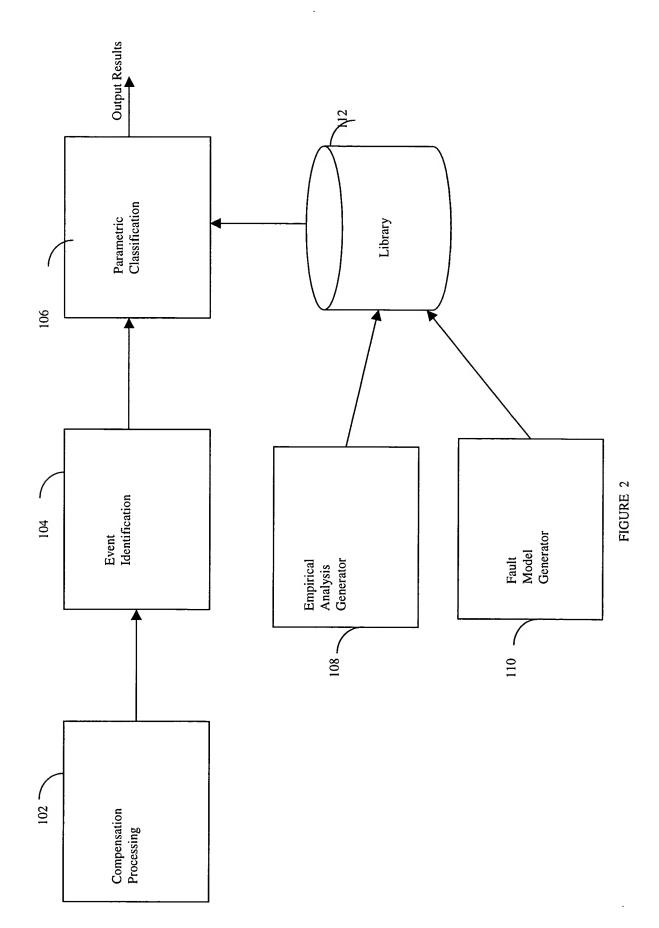
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 1 of 52 Docket No.: BFM-03701

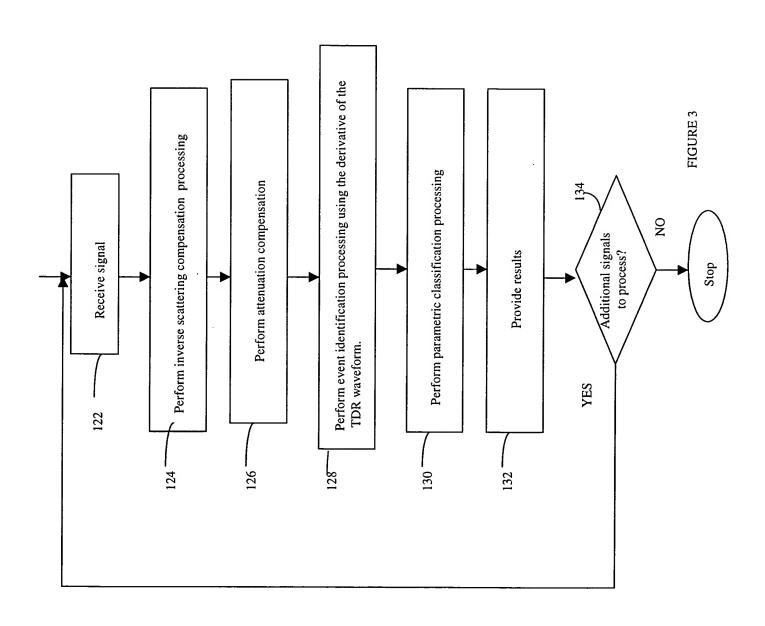


Title: WIRE EVENT DETECTION Inventor: Eric Bechhoefer

Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 2 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003
Serial No.: To be assigned
Sheet 3 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 4 of 52 Docket No.: BFM-03701

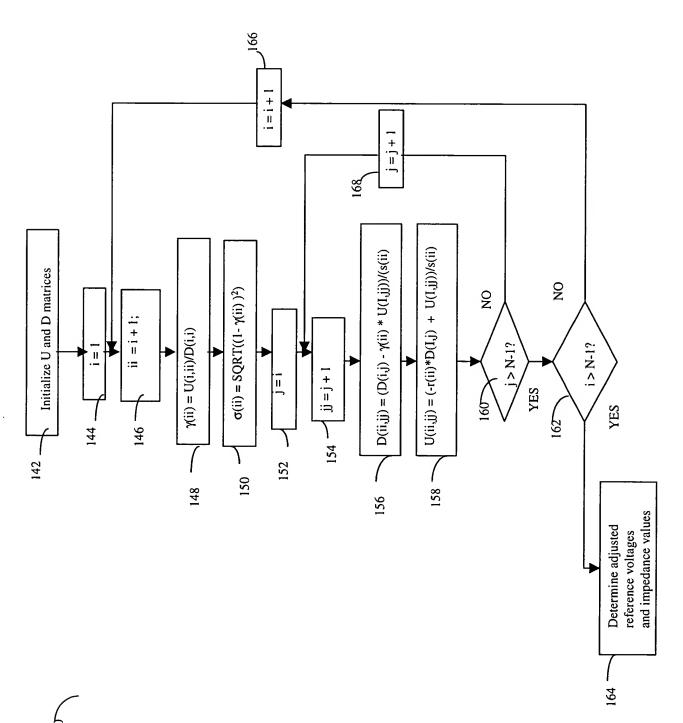


FIGURE 4

Title: WIRE EVENT DETECTION
Inventor: Eric Bechhoefer
Filing Date: October 30, 2003
Serial No.: To be assigned
Sheet 5 of 52 Docket No.: BFM-03701

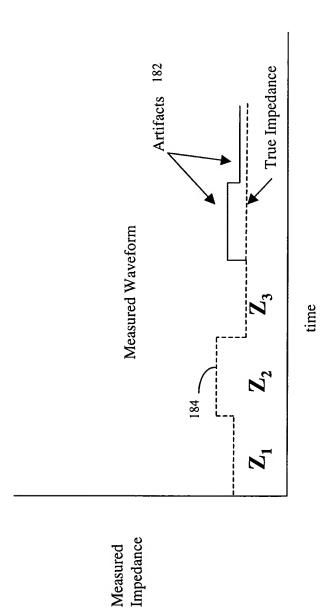
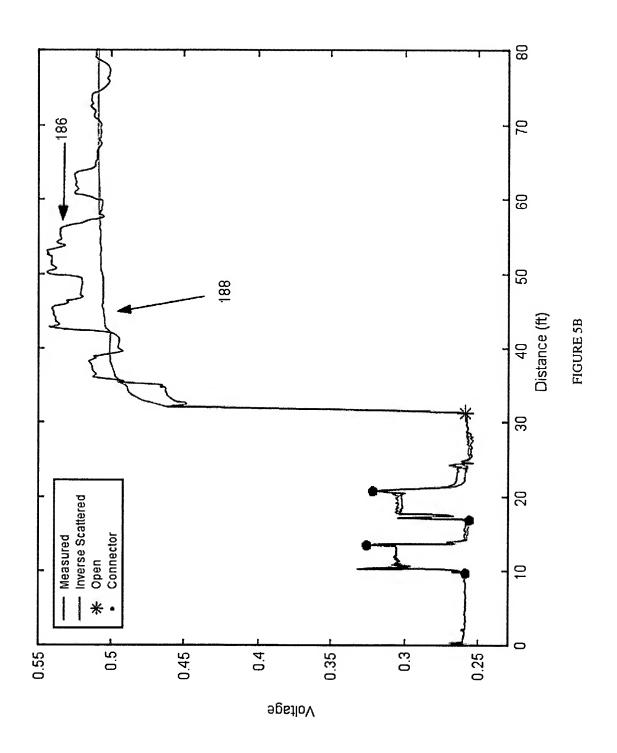


FIGURE 5A

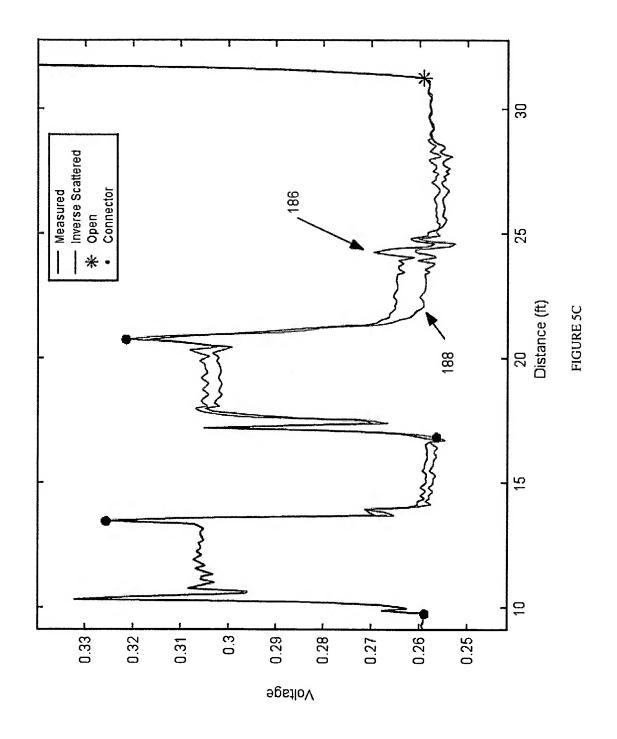
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 6 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 7 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 8 of 52 Docket No.: BFM-03701

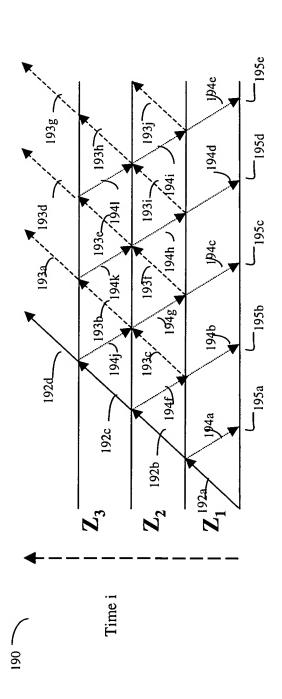
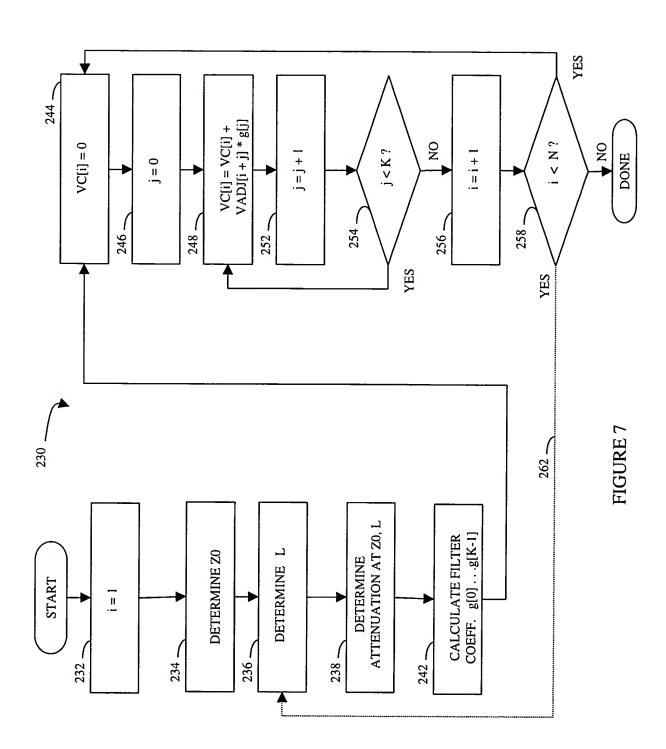


FIGURE 6

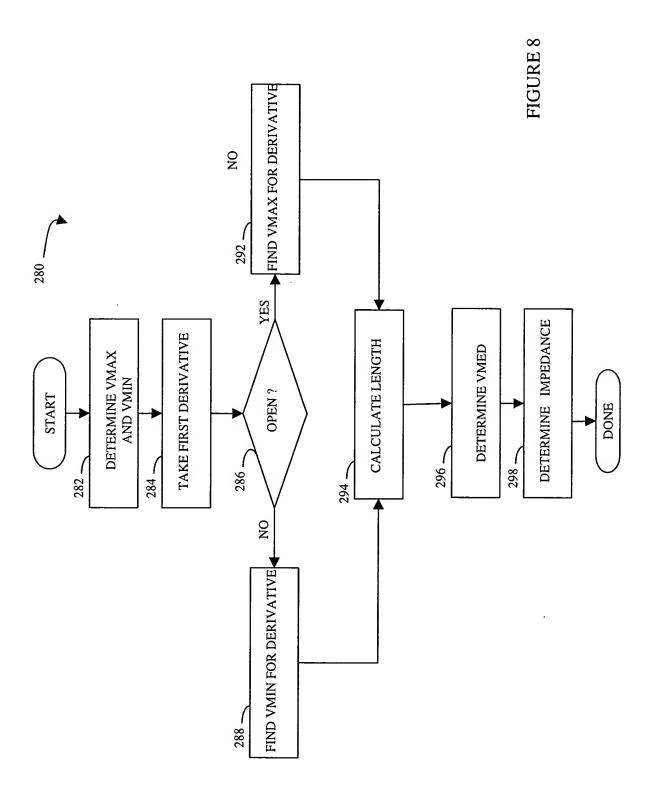
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

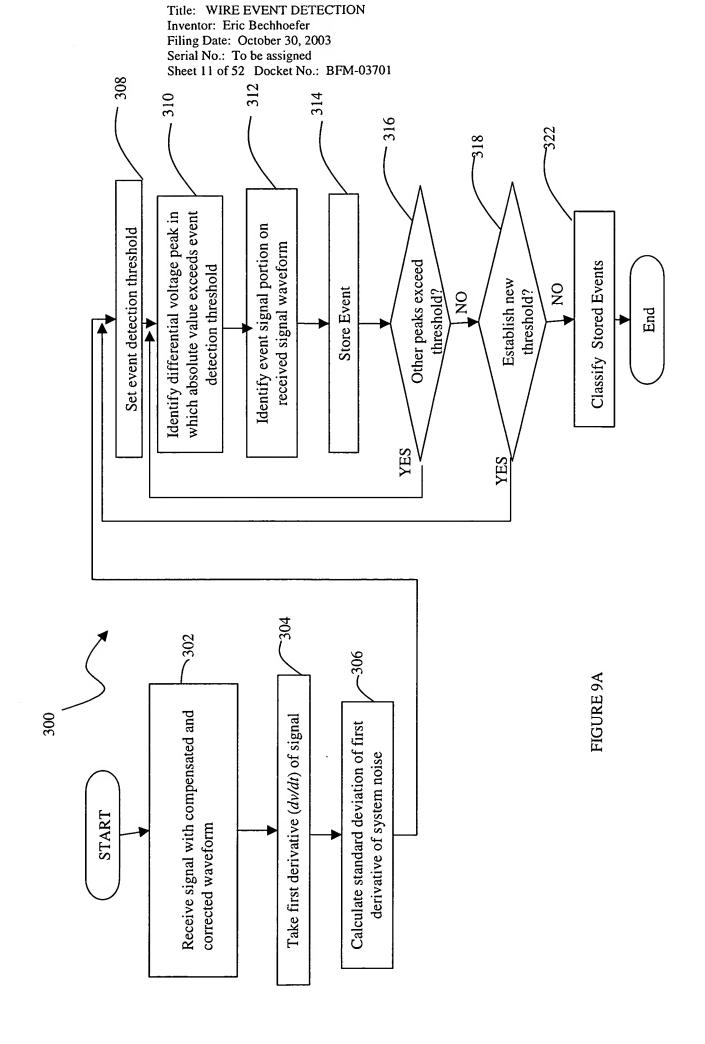
Sheet 9 of 52 Docket No.: BFM-03701

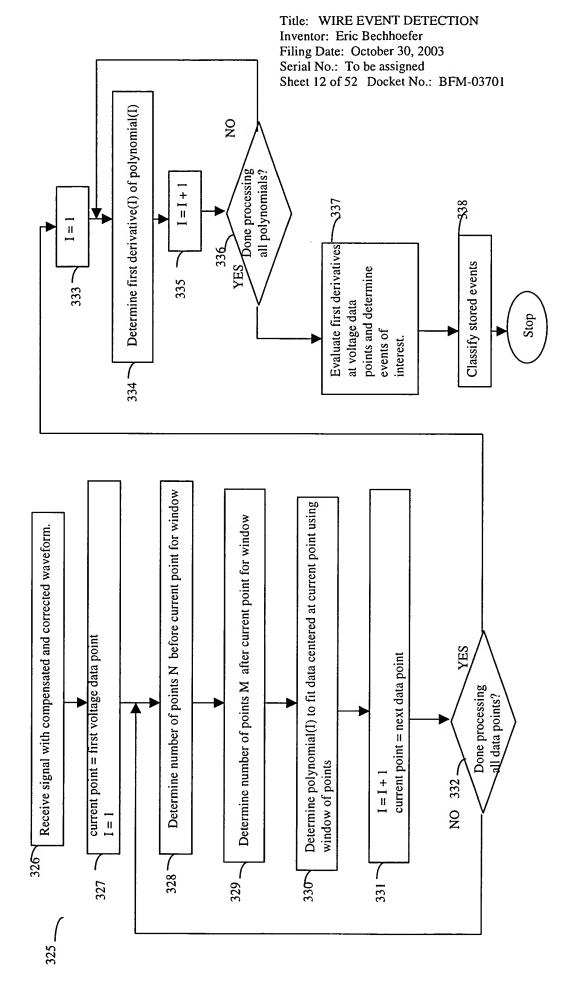


Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Serial No.: To be assigned Sheet 10 of 52 Docket No.: BFM-03701







Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 13 of 52 Docket No.: BFM-03701

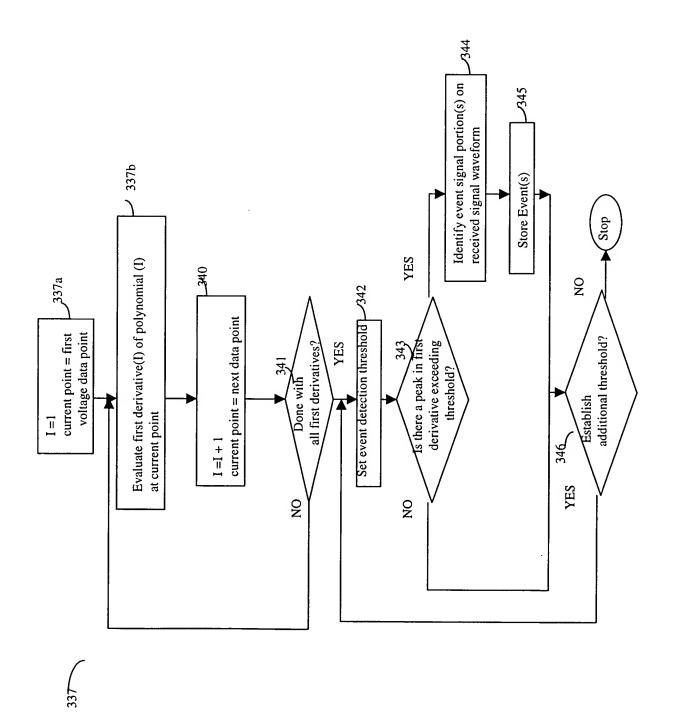
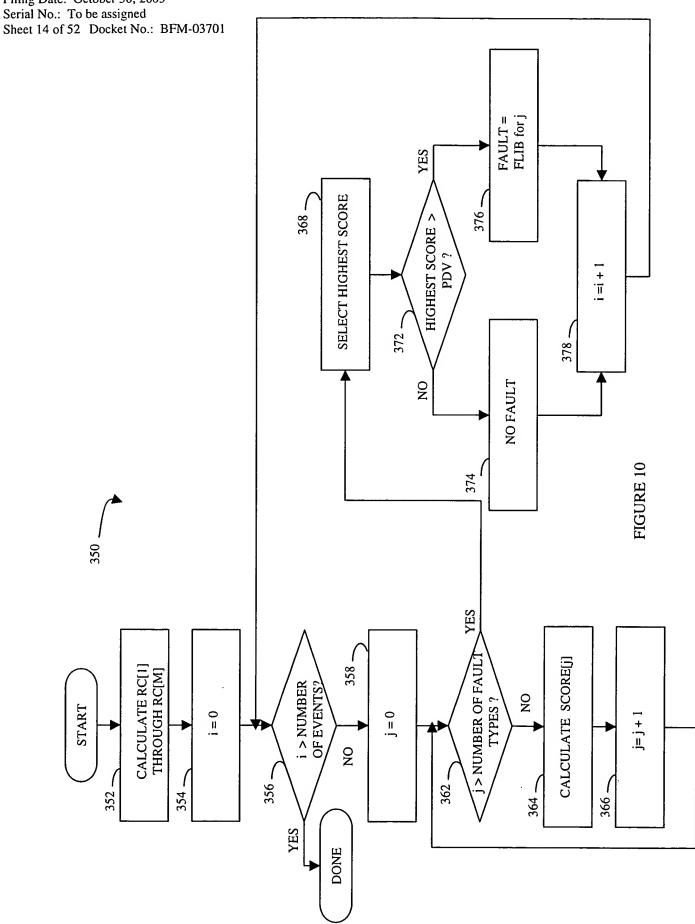


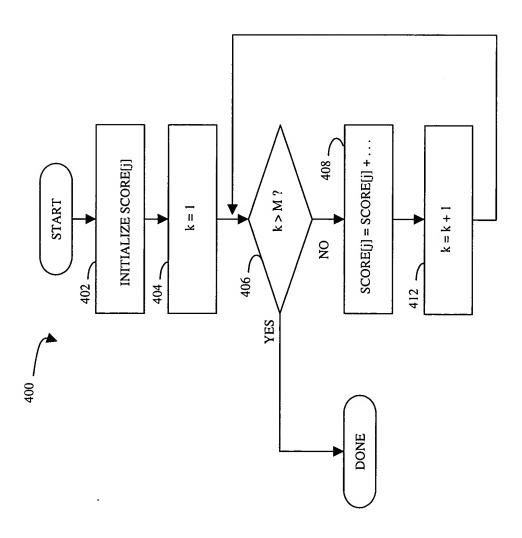
FIGURE 9C

Title: WIRE EVENT DETECTION Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned



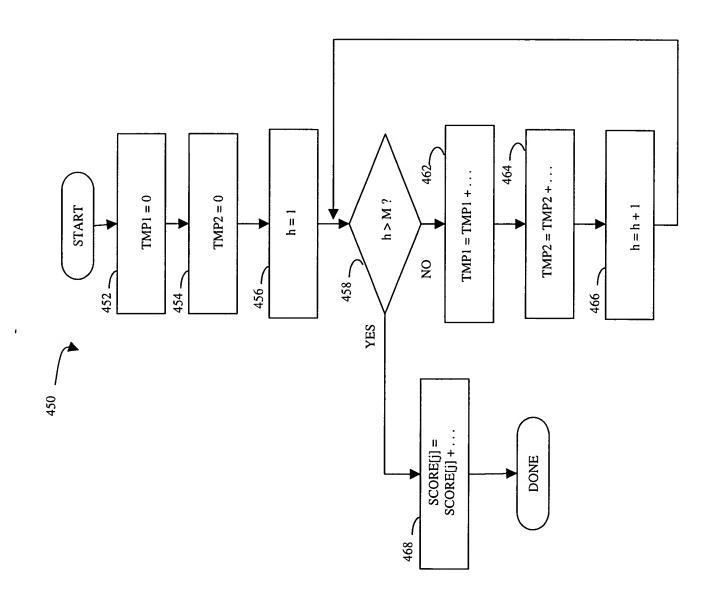
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 15 of 52 Docket No.: BFM-03701

FIGURE 11

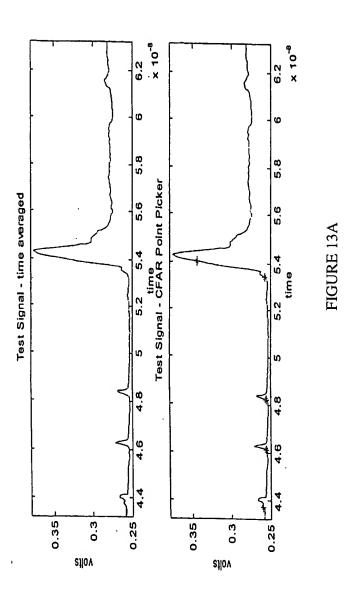


Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 16 of 52 Docket No.: BFM-03701

FIGURE 12



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 17 of 52 Docket No.: BFM-03701



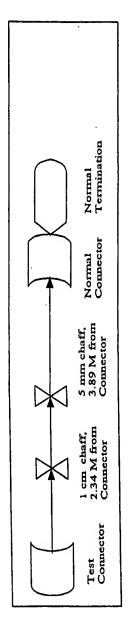
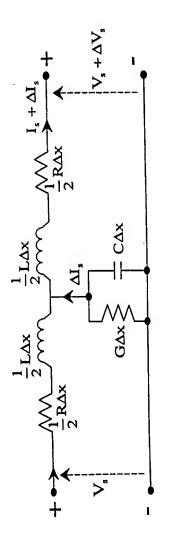
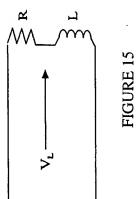


FIGURE 13B

Inventor: Eric Bechhoefer Filing Date: October 30, 2003
Serial No.: To be assigned
Sheet 18 of 52 Docket No.: BFM-03701

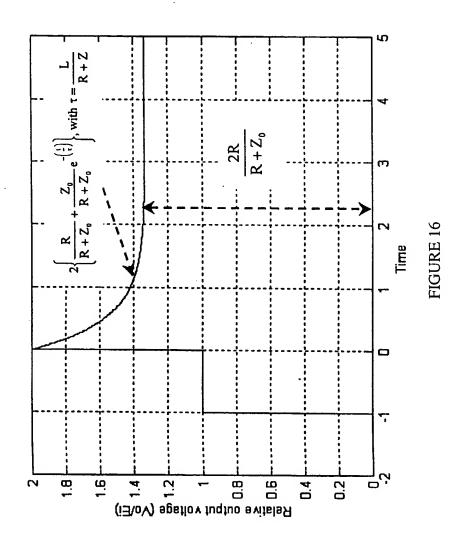
FIGURE 14





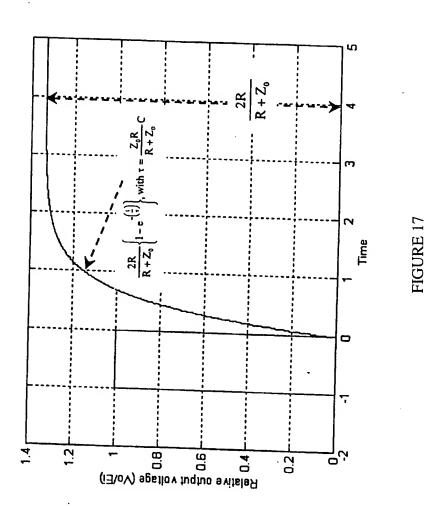
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 19 of 52 Docket No.: BFM-03701



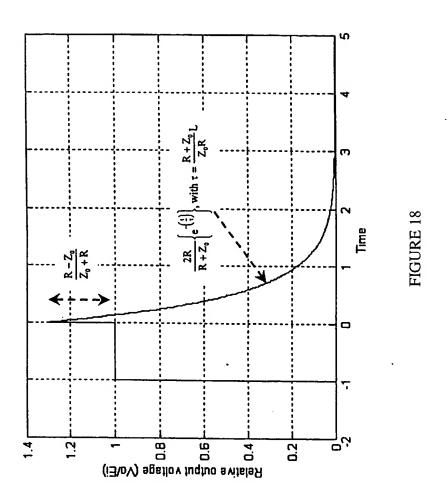
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 20 of 52 Docket No.: BFM-03701



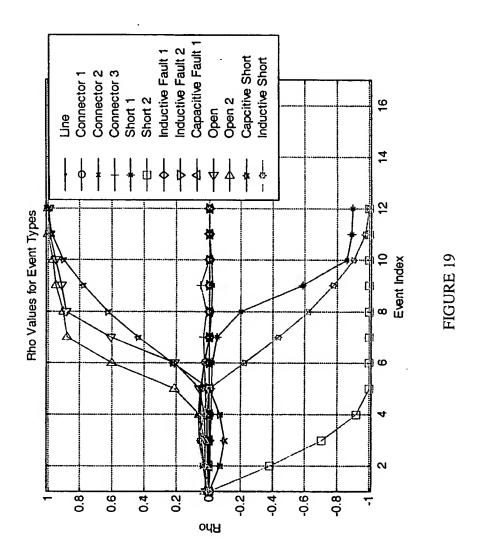
Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 21 of 52 Docket No.: BFM-03701

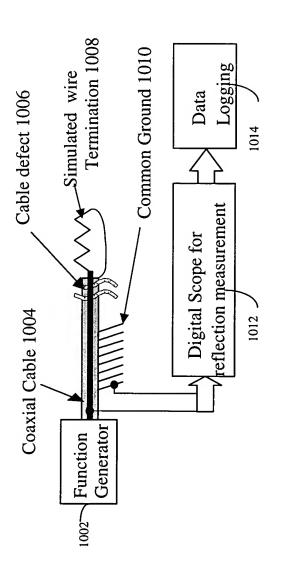


Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 22 of 52 Docket No.: BFM-03701

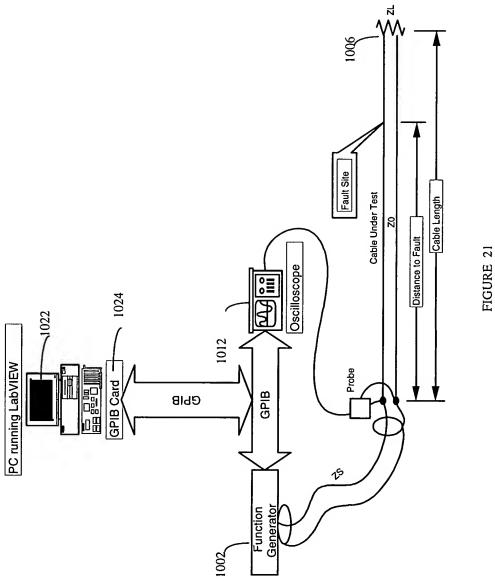


Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 23 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 24 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 25 of 52 Docket No.: BFM-03701

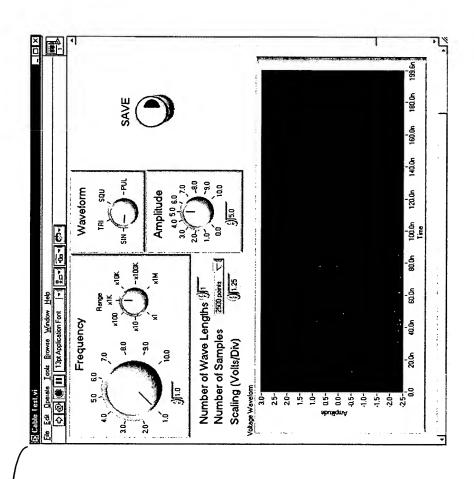


FIGURE 22A

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 26 of 52 Docket No.: BFM-03701

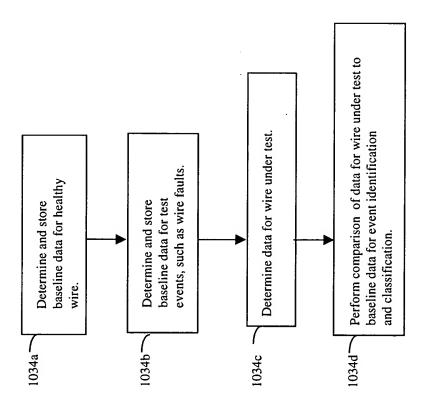


FIGURE 22B

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 27 of 52 Docket No.: BFM-03701

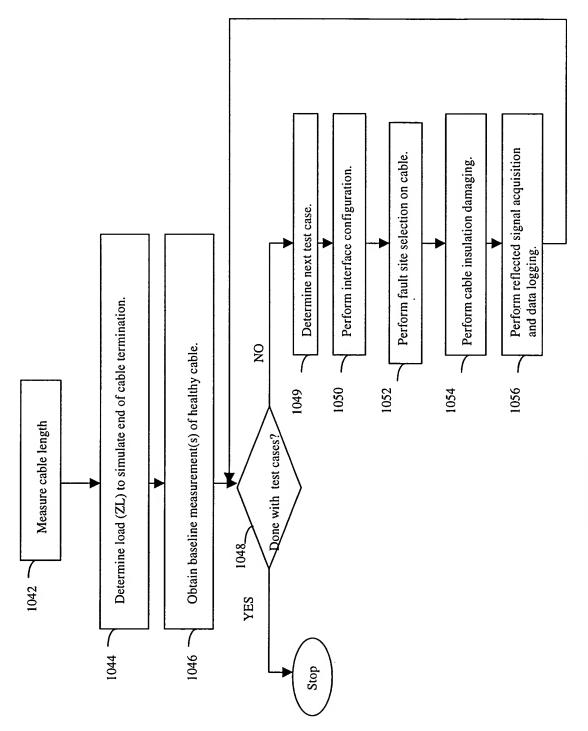


FIGURE 22C

Title: WIRE EVENT DETECTION Inventor: Eric Bechhoefer

Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 28 of 52 Docket No.: BFM-03701

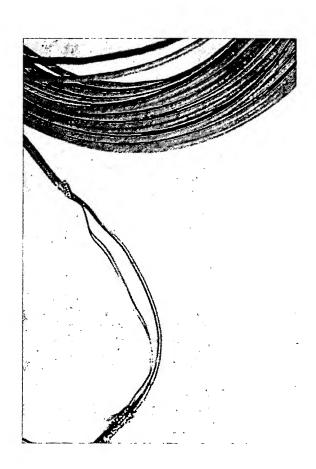


FIGURE 23

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 29 of 52 Docket No.: BFM-03701

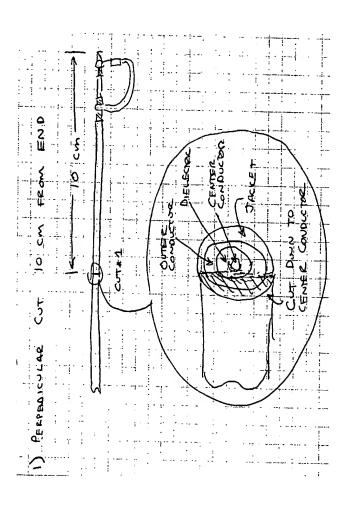


FIGURE 24A

Sheet 30 of 52 Docket No.: BFM-03701

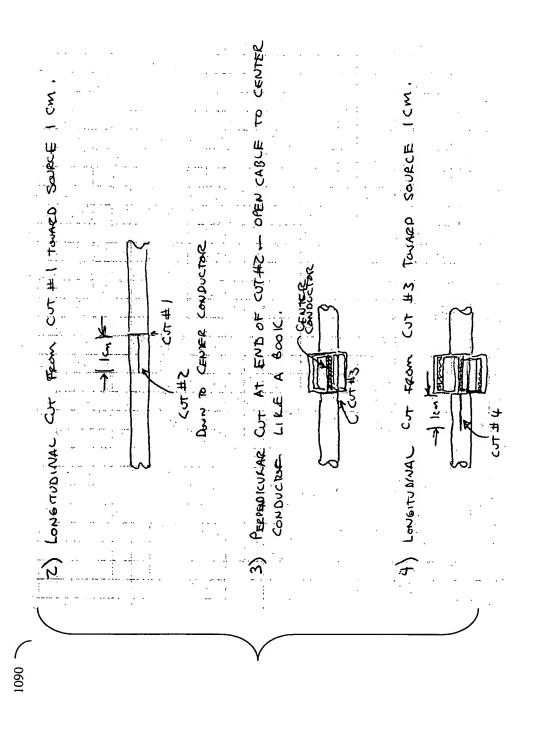


FIGURE 24B

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 31 of 52 Docket No.: BFM-03701

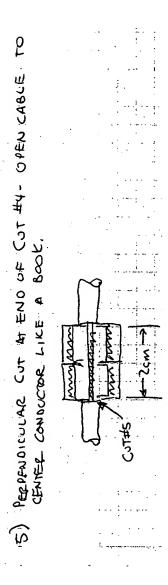


FIGURE 24C

Sheet 32 of 52 Docket No.: BFM-03701

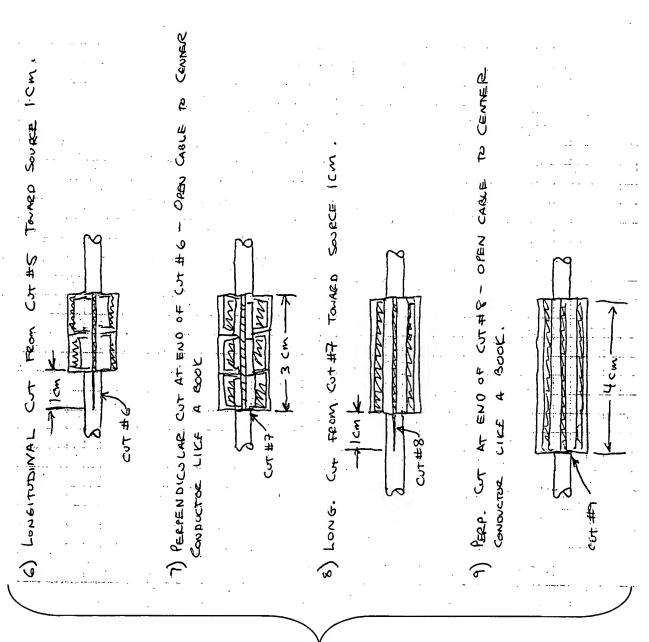
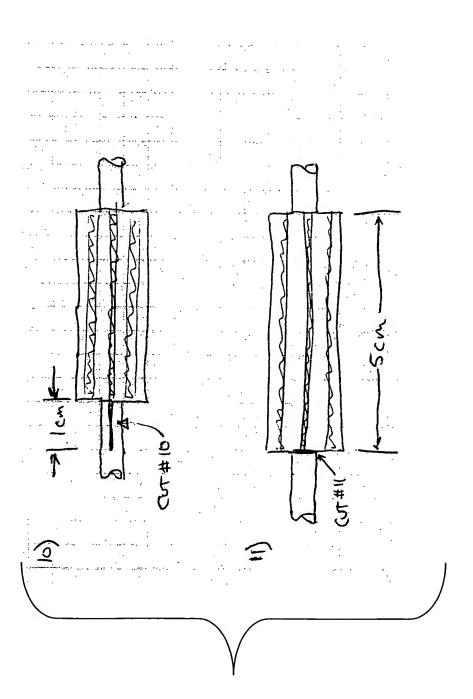
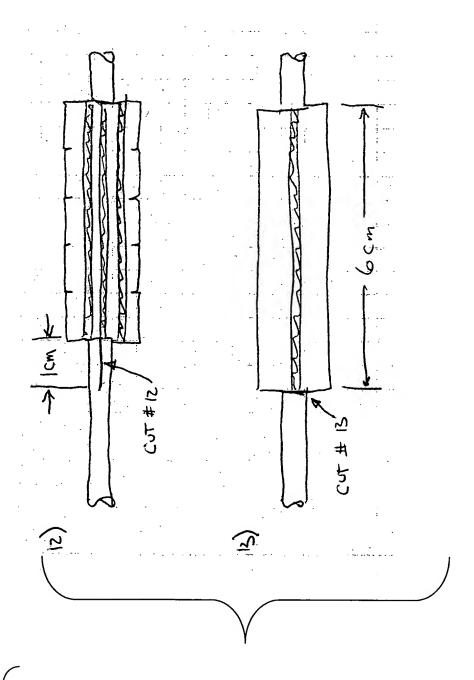


FIGURE 24D

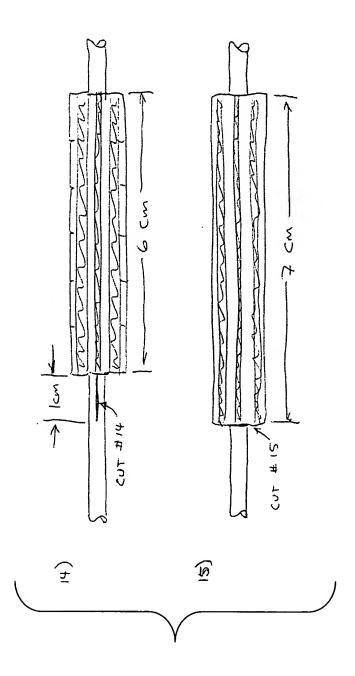
Serial No.: To be assigned Sheet 33 of 52 Docket No.: BFM-03701



Sheet 34 of 52 Docket No.: BFM-03701



Sheet 35 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 36 of 52 Docket No.: BFM-03701

Reflections generated by an eight ns-width pulse and sampled at 1-GHZ frequency.

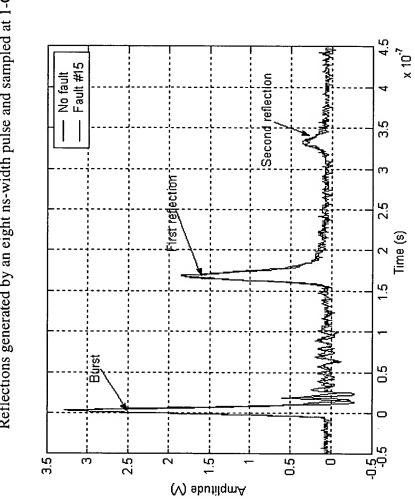


FIGURE 24H

1145

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 37 of 52 Docket No.: BFM-03701

of the Figure 24H over a time-span of 0.5 microseconds and a frequency band of $0.1 \rightarrow 5.6 \text{ MHz}$. Differential wavelet energy ratio versus fault-sizes computed using the pulse stimulus

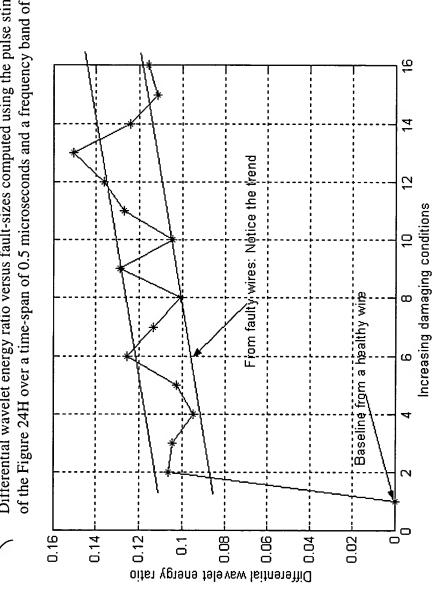


FIGURE 25

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 38 of 52 Docket No.: BFM-03701

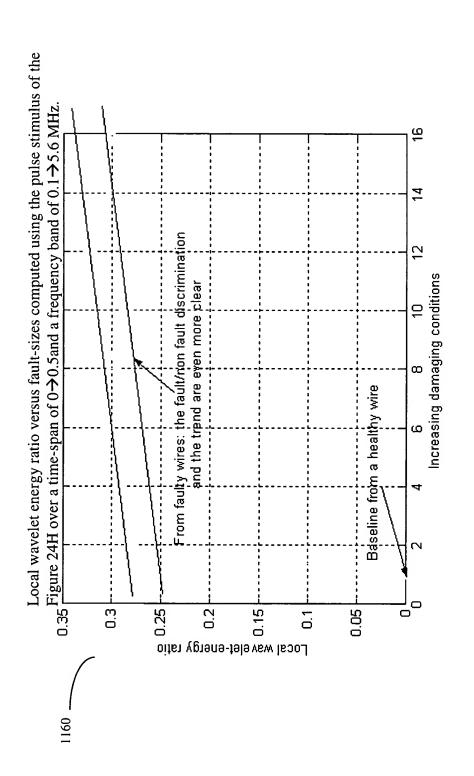
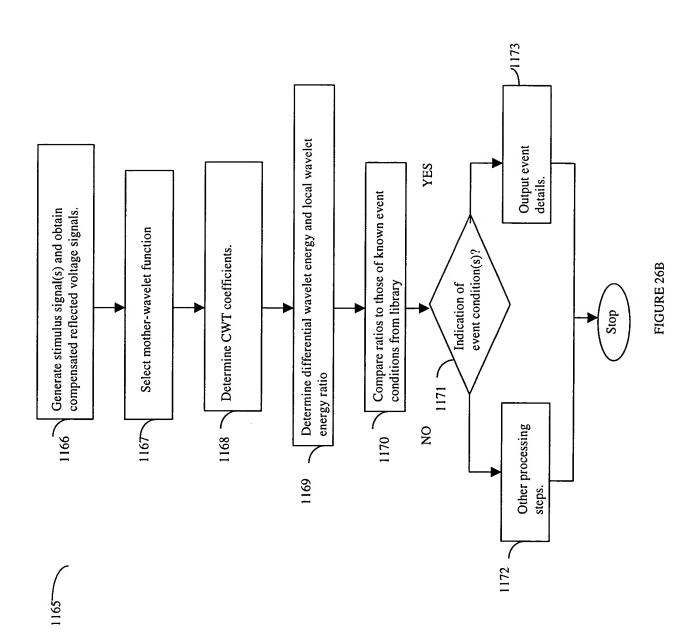
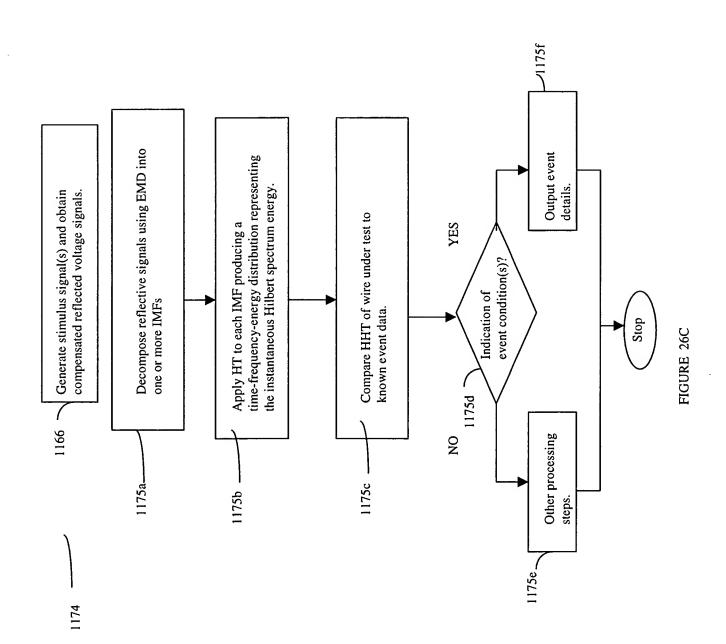


FIGURE 26A

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 39 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 40 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 41 of 52 Docket No.: BFM-03701

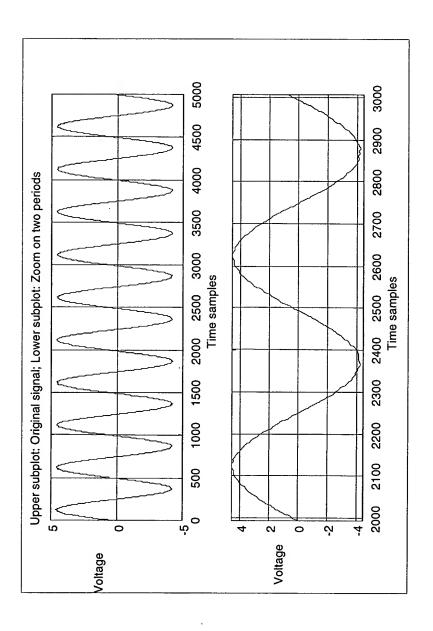


FIGURE 27A

FIGURE 27B

Title: WIRE EVENT DETECTION Inventor: Eric Bechhoefer

Filing Date: October 30, 2003

Serial No.: To be assigned Sheet 42 of 52 Docket No.: BFM-03701

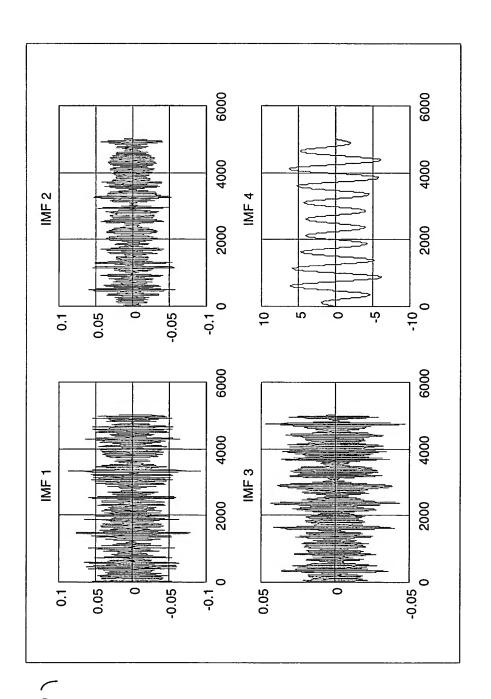
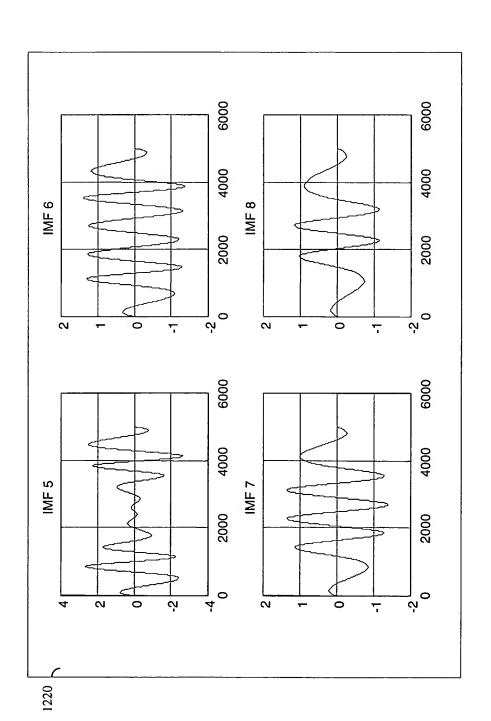


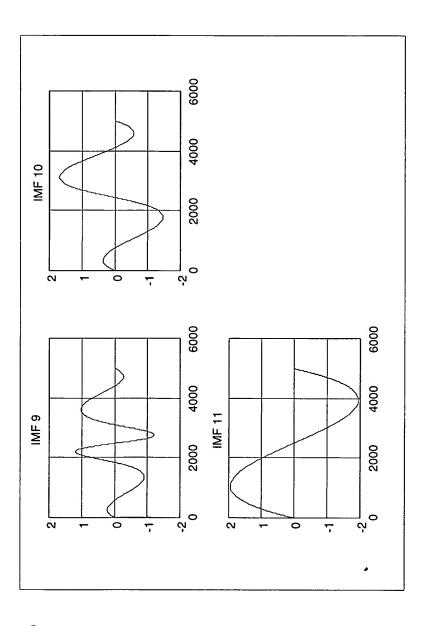
FIGURE 27C

Title: WIRE EVENT DETECTION

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 43 of 52 Docket No.: BFM-03701





Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Serial No.: To be assigned Sheet 45 of 52 Docket No.: BFM-03701

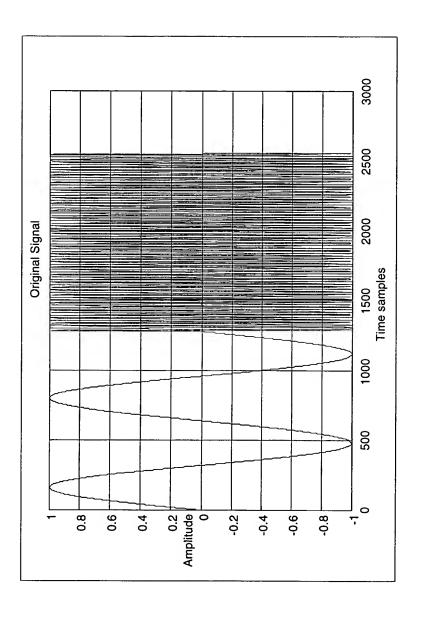


FIGURE 28A

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 46 of 52 Docket No.: BFM-03701

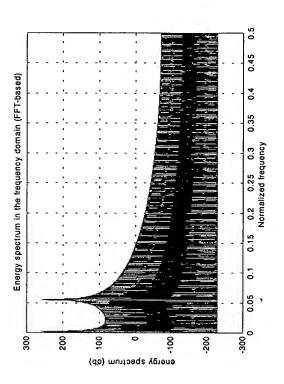
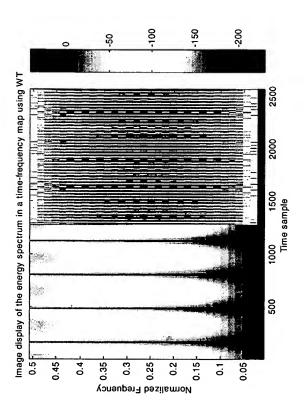


FIGURE 28B

Sheet 47 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 48 of 52 Docket No.: BFM-03701

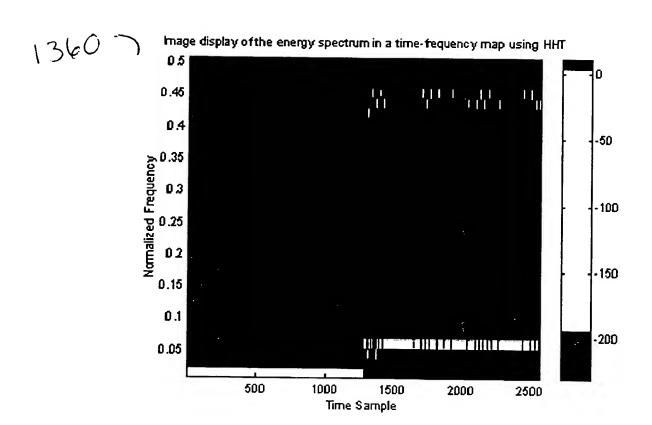
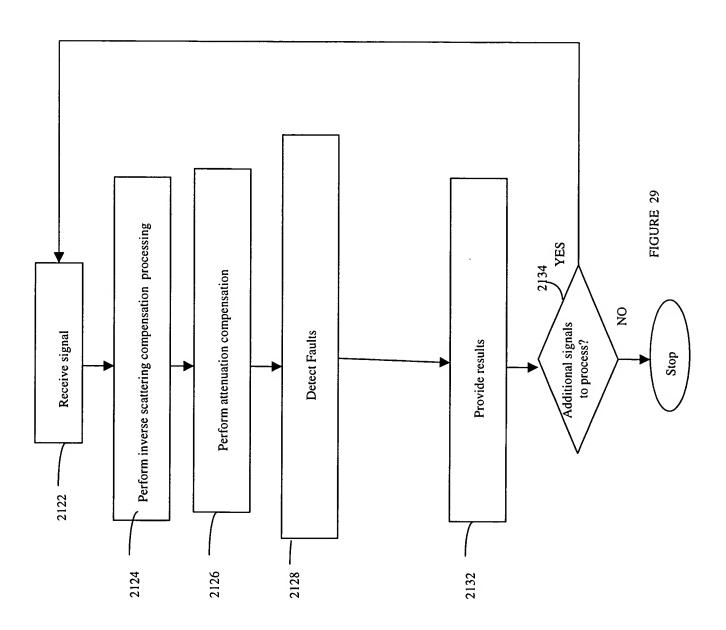


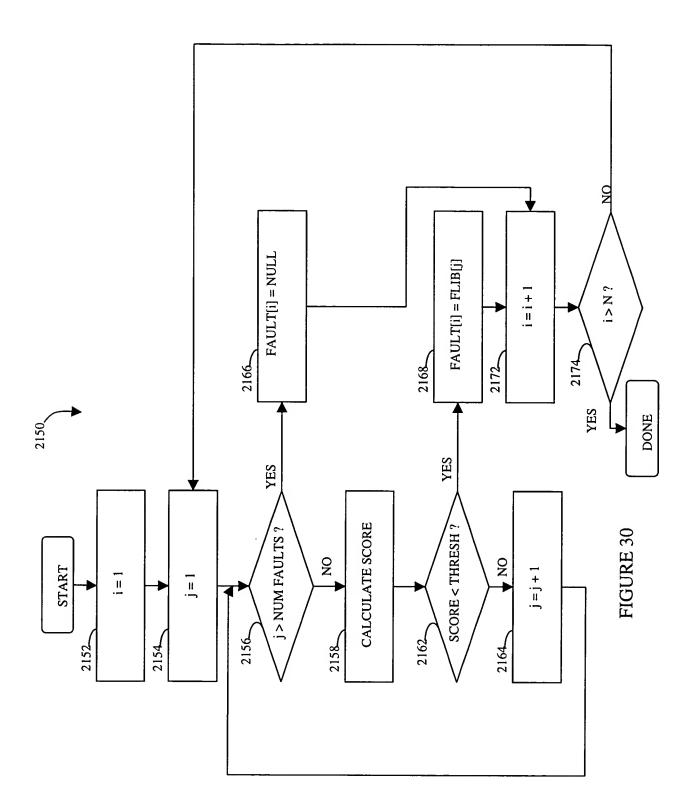
FIGURE 28D

Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 49 of 52 Docket No.: BFM-03701

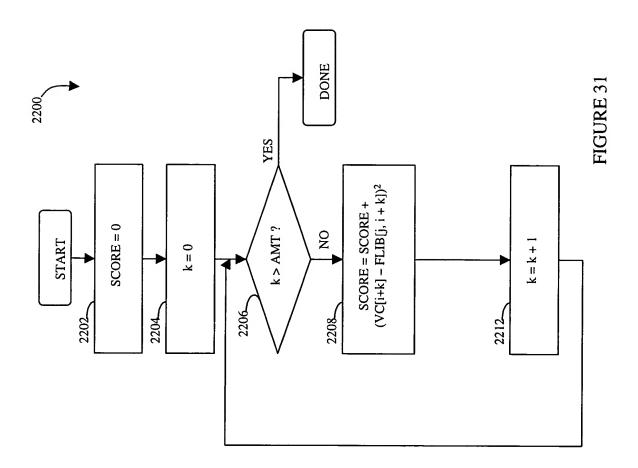


Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Sheet 50 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned Sheet 51 of 52 Docket No.: BFM-03701



Inventor: Eric Bechhoefer Filing Date: October 30, 2003 Serial No.: To be assigned

Serial No.: To be assigned Sheet 52 of 52 Docket No.: BFM-03701

